1. A parametric model based computer implemented method for customizing ablative surgery, comprising:

accessing a parametric model;

receiving pre-perturbation data concerning a cornea on which a refractive ophthalmic treatment will be performed;

receiving post-perturbation data concerning the cornea on which the refractive ophthalmic treatment will be performed; and

updating an ablative surgical algorithm based, at least in part, on one or more correlations in the parametric model, where the correlations are between one or more of the pre-perturbation data, the post-perturbation data, and a predicted post-operative result.

2. The method of claim 1, where the perturbation is ultrasound.

3. The method of claim 1, where the perturbation is a corneal incision and severs one or more corneal lamellae.

4. The method of claim 1, where the perturbation is a corneal ablation and severs one or more corneal lamellae.

5. The method of claim 1, where the perturbation is a LASIK flap cut and severs one or more corneal lamellae.

6. The method of claim 1, where the perturbation is peeling a corneal epithelium and severs one or more corneal lamellae.

7. The method of claim 1, where the pre-perturbation data comprises one or more of topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, corneal acoustic response and ultrasonic data, wave front data, and intraocular pressure data.

8. The method of claim 1, where the post-perturbation data comprises one or more of topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, corneal acoustic response and ultrasonic data, wave front data, flap thickness data, and intraocular pressure data.

9. The method of claim 1, comprising:

receiving diagnostic data; and

selectively updating the parametric model based, at least in part, on the diagnostic data, which comprises one or more of corneal acoustic response and ultrasonic data, patient satisfaction data, patient visual acuity and visual performance data, patient halo effect and contour sensitivity data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, intraocular pressure data, flap thickness data, and refractive data.

10. A computer readable medium storing computer executable instructions operable to perform computer executable portions of the method of claim 1.

11. A system for updating an ablation algorithm, comprising:

a data receiver for receiving a corneal data;

a parametric model for storing correlations between the corneal data, a post-operative result and an ablation algorithm update; and

an ablation algorithm processor for updating an ablation algorithm based, at least in part, on the corneal data and the correlations.

12. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, and intraocular pressure data measured before a cornea is cut.

13. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, and intraocular pressure data measured before a cornea is ablated.

14. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, and intraocular pressure data measured before a cornea is scraped.

15. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, and intraocular pressure data measured before a corneal epithelial layer is peeled.

16. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, patient halo effect and contour sensitivity data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, intraocular pressure data, flap thickness data, and refractive data measured after a cornea is cut.

17. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, patient halo effect and contour sensitivity data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data,

intraocular pressure data, flap thickness data, and refractive data measured after a cornea is ablated.

18. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, patient halo effect and contour sensitivity data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, intraocular pressure data, flap thickness data, and refractive data measured after a cornea is scraped.

19. The system of claim 11, where the corneal data comprises at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, patient halo effect and contour sensitivity data, topographic data, pachymetric data, elevation data, total corneal thickness data, corneal curvature data, wave front data, intraocular pressure data, flap thickness data, and refractive data measured after a corneal epithelial layer is peeled.

20. A computer readable medium storing computer executable components of the system of claim 11.

21. A system for customizing an ablation algorithm, comprising:

means for acquiring a pre-operative data by measuring a cornea pre-operatively;

means for acquiring a post-perturbation data by measuring a cornea after a perturbation that severs one or more corneal lamellae has been made in the cornea;

means for acquiring a first correlation data between the pre-operative data and a first predicted post-operative result; and

means for updating an ablation algorithm based on the first correlation data.

22. The system of claim 21, comprising:

means for acquiring a second correlation data between the post-perturbation data and a second predicted post-operative result; and

means for updating the ablation algorithm based on the second correlation data.

23. The system of claim 22, wherein said first and second predictive post-operative results are each one or more of a predetermined visual performance, a predetermined corneal shape, a predetermined modulus of elasticity, a predetermined corneal acoustic response to ultrasonic excitation, a predetermined pachymetric profile in multiple meridians, a predetermined pachymetric asymmetry between vertical and horizontal meridians, a predetermined magnitude of difference in pachymetry between center and periphery, a predetermined corneal width, a predetermined anterior chamber angle and depth, a predetermined corneal curvature profile in multiple meridians, magnitude of astigmatism, a predetermined difference in astigmatism between center and periphery topographic in response to the perturbation.

24. A system for updating a parametric ablation model, comprising:

a corneal data receiver that receives at least one of a pre-perturbation data, a post-perturbation data, a post-ablation data, and patient visual performance data; and

a data integrator that selectively updates the surgical ablation parametric model based, at least in part, on at least one of, the pre-perturbation data, the post-perturbation data, the post-ablation data and the patient visual performance data.

25. A corneal ablative surgical method, comprising:

measuring a first set of corneal measurements before one or more perturbations;

selectively updating a corneal ablative algorithm based on the first set of corneal measurements after the one or more perturbations and one or more first correlations between the first set of corneal measurements and one or more predicted post-operative results, where the correlations are retrievable from a parametric model;

measuring a second set of corneal measurements after one or more perturbations;

selectively updating the corneal ablative algorithm based on the second set of corneal measurements and one or more second correlations between the second set of corneal measurements and one or more predicted post-operative results, where the second correlations are retrievable from the parametric model; and

ablating corneal tissue from a cornea in accordance with the updated corneal ablative algorithm.

26. The method of claim 25, where measuring the first set of corneal measurements comprises measuring at least one of corneal acoustic response and ultrasonic data, patient

visual acuity and visual performance data, topographic data, pachymetric data, elevation data, corneal thickness data, corneal curvature data, wave front data, intraocular pressure data, peripheral stroma thickness data, an age datum, a sex datum, contact lens use data, and prior surgical response data by at least one of corneal topography, optical coherence tomography, wave front analysis, ultrasound, and patient interview.

27. The method of claim 25, where measuring the second set of corneal measurements comprises measuring at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, topographic data, pachymetric data, elevation data, corneal thickness data, corneal curvature data, wave front data, intraocular pressure data, peripheral stroma thickness data, an age datum, a sex datum, contact lens use data, and prior surgical response data by at least one of corneal topography, optical coherence tomography, wave front analysis, ultrasound, and patient interview.

28. A corneal ablative surgical method, comprising:

accessing a parametric model that holds one or more correlations between corneal measurements and post-operative results;

measuring a set of corneal measurements before a corneal ablative procedure;

selectively updating a corneal ablative algorithm based on the set of corneal measurements and the one or more correlations; and

ablating corneal tissue from a cornea in accordance with the updated corneal ablative algorithm.

29. The method of claim 28, where measuring the set of corneal measurements comprises measuring at least one of corneal acoustic response and ultrasonic data, patient visual acuity and visual performance data, topographic data, pachymetric data, elevation data, corneal thickness data, corneal curvature data, wave front data, intraocular pressure data, peripheral stroma thickness data, an age datum, a sex datum, contact lens use data, and prior surgical response data by one or more of corneal topography, optical coherence tomography, wave front analysis, ultrasound, and patient interview.

30. A computer readable medium having stored thereon a data structure employed in updating a corneal ablative algorithm, comprising:

a first field that holds information concerning one or more pre-operative corneal measurements;

a second field that holds information concerning one or more predicted post-operative results, where the predicted post-operative results are derived from the one or more pre-operative corneal measurements via one or more correlations stored in a parametric model; and

a third field that holds information concerning one or more updates to an ablative algorithm where the updates are derived from the pre-operative corneal measurements, the predicted post-operative results and the correlations.

31. The computer readable medium of claim 29, comprising:

a fourth field that holds information concerning one or more corneal measurements taken after one or more perturbation; and

where the information stored in the third field is derived from the pre-operative corneal measurements, the corneal measurements taken during a corneal ablative procedure, the predicted post-operative results, and the correlations.

32. A set of application programming interfaces embodied on a computer readable medium for execution by a computer component in conjunction with updating an ablative algorithm, comprising:

a first interface for communicating a corneal measurement data;

a second interface for communicating a correlation data; and

a third interface for communicating an ablative algorithm updating data derived from the corneal measurement data and the correlation data.

33. In a computer system having a graphical user interface comprising a display and a selection device, a method of providing and selecting from a set of data entries on the display, the method comprising:

retrieving a set of data entries, each of the data entries representing a choice concerning updating an ablative algorithm based on correlations between corneal measurements and predicted post-operative results;

displaying the set of entries on the display;

receiving a data entry selection signal indicative of the selection device selecting a selected data entry; and

in response to the data entry selection signal, initiating an operation associated with the selected data entry.

34. A computer data signal embodied in a transmission medium, comprising:

a first set of instructions for receiving corneal measurements;

a second set of instructions for identifying a correlation between a corneal measurement and a predicted post-operative result; and

a third set of instructions for updating an ablative algorithm based on the corneal measurements and/or the predicted post-operative result.

35. A data packet for transmitting an ablative algorithm update, comprising:

a first field that stores a corneal measurement data;

a second field that stores a correlation data; and

a third field that stores an ablative algorithm data derived from the corneal measurement data and the correlation data.

36. A corneal ablative algorithm updating method, comprising:

accessing an ablative algorithm;

accessing a parametric model that holds one or more correlations between pre-operative measurements and post-operative results;

receiving a pre-operative data; and

selectively updating the ablative algorithm based on the pre-operative data and one or more correlations between the pre-operative data and one or more predicted post-operative results.

37. A corneal ablative algorithm selection and updating method, comprising:

accessing a parametric model that holds one or more correlations between pre-operative measurements and a predicted post-operative result;

receiving one or more pre-operative measurements;

selecting an ablative algorithm based on the pre-operative measurements and one or more correlations; and

selectively updating the ablative algorithm based on the pre-operative measurements and one or more correlations.

38. A laser eye surgery apparatus for performing a customized laser ablation of corneal tissue, comprising:

a laser for ablating corneal tissue that produces a predicted post-operative result;

a memory for storing an ablation program that controls the laser;

a memory for storing a corneal measurement data;

a memory for storing a parametric model that stores a correlation between the corneal measurement data and the predicted post-operative result; and

a processor for adapting the ablation program based on the correlation.

39. A laser eye surgery apparatus for performing a customized laser ablation of corneal tissue, comprising:

a laser for ablating corneal tissue that produces a predicted post-operative result;

a computer component for receiving an ablation program updated as a result of a correlation between a corneal measurement and the predicted post-operative result; and

a memory for storing the updated ablation program.